**Comparison table**

*(#All experiments are done using 15% of total features at initial state.)*

**1. Leukemia Dataset**

**(i.) KNN Stats:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Techniques/Performance Metrics** | **Accuracy** | **F1 Score** | **Time Taken** | **Test Accuracy** | **Test F1 Score** |
| **Without Feature Selection** | 92.8% | 0.948 | 205ms | 93.3% | 0.952 |
| **Mutual Info(F1)** | 92.8% | 0.948 | 31.7 ms | 93.3% | 0.952 |
| **F Classifier(F2)** | 98.24% | 0.986 | 29.5 ms | 100% | 1.0 |
| **T test(F3)** | 80.70% | 0.8705 | 29 ms | 73.3% | 0.83 |
| **Union(F1,F2,F3)** | 94.70% | 0.9610 | 39.8 ms | 93.3% | 0.952 |
| **Concat.1(F1,F2,F3)** | 94.70% | 0.9610 | 21.8 ms | 93.3% | 0.952 |
| **Concat.2(F2,F3,F1)** | 98.40% | 0.986 | 20.1 ms | 93.3% | 0.952 |
| **Concat.3(F3,F1,F2)** | 96.40% | 0.973 | 13.5 ms | 100% | 1.0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Techniques/Performance Metrics** | **Accuracy** | **F1 Score** | **Time Taken** | **Test Accuracy** | **Test F1 Score** |
| **Without Feature Selection** | 96.4% | 0.972 | 210ms | 100% | 1.0 |
| **Mutual Info(F1)** | 98.24% | 0.986 | 33.1 ms | 100% | 1.0 |
| **F Classifier(F2)** | 96.4% | 0.973 | 31.8 ms | 93.3% | 0.952 |
| **T test(F3)** | 94.7% | 0.959 | 30.8 ms | 86.6% | 0.909 |
| **Union(F1,F2,F3)** | 94.7% | 0.959 | 39.2 ms | 93.3% | 0.952 |
| **Concat.1(F1,F2,F3)** | 96.4% | 0.973 | 25 ms | 93.3% | 0.952 |
| **Concat.2(F2,F3,F1)** | 94.4% | 0.972 | 27.7 ms | 100% | 1.0 |
| **Concat.3(F3,F1,F2)** | 98.2% | 0.986 | 21.5 ms | 86.6% | 0.88 |

**(ii.) SVM Stats:**

**Comparison table**

*(#All experiments are done using 15% of total features at initial state.)*

**2. DLBCL Dataset**

**(i.) KNN Stats:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Techniques/Performance Metrics** | **Accuracy** | **F1 Score** | **Time Taken** | **Test Accuracy** | **Test F1 Score** |
| **Without Feature Selection** | 77.04% | 0.86 | 205ms | 81.25% | 0.89 |
| **Mutual Info(F1)** | 96.72% | 0.97 | 37.4ms | 93.75% | 0.96 |
| **F Classifier(F2)** | 96.72% | 0.98 | 40.3ms | 93.75% | 0.96 |
| **T test(F3)** | 77.04% | 0.86 | 43.7ms | 81.25% | 0.896 |
| **Union(F1,F2,F3)** | 85.24% | 0.91 | 55.3ms | 81.25% | 0.897 |
| **Concat.1(F1,F2,F3)** | 91.08% | 0.947 | 23.7ms | 92.75% | 0.962 |
| **Concat.2(F2,F3,F1)** | 91.80% | 0.945 | 22.1ms | 93.75% | 0.960 |
| **Concat.3(F3,F1,F2)** | 98.36% | 0.9887 | 22.3ms | 93.75% | 0.962 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Techniques/Performance Metrics** | **Accuracy** | **F1 Score** | **Time Taken** | **Test Accuracy** | **Test F1 Score** |
| **Without Feature Selection** | 95.08% | 0.96 | 212ms | 87.5% | 0.92 |
| **Mutual Info(F1)** | 98.36% | 0.99 | 40.4ms | 93.75% | 0.96 |
| **F Classifier(F2)** | 96.72% | 0.98 | 98.1ms | 93.75% | 0.96 |
| **T test(F3)** | 93.44% | 0.95 | 44.1ms | 81.25% | 0.87 |
| **Union(F1,F2,F3)** | 93.45% | 0.953 | 59.3ms | 75% | 0.83 |
| **Concat.1(F1,F2,F3)** | 98.36% | 0.9887 | 27.5ms | 81.25% | 0.869 |
| **Concat.2(F2,F3,F1)** | 96.72% | 0.977 | 27.5ms | 93.75% | 0.96 |
| **Concat.3(F3,F1,F2)** | 95.08% | 0.9655 | 28.2ms | 93.75% | 0.96 |

**(ii.) SVM Stats:**

**Comparison table**

*(#All experiments are done using 15% of total features at initial state.)*

**3. Lung Dataset**

**(i.) KNN Stats:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Techniques/Performance Metrics** | **Accuracy** | **F1 Score** | **Time Taken** | **Test Accuracy** | **Test F1 Score** |
| **Without Feature Selection** | 85.89% | 0.910 | 1280 ms | 67.74% | 0.7238 |
| **Mutual Info(F1)** | 84.9% | 0.904 | 157 ms | 65.5% | 0.748 |
| **F Classifier(F2)** | 92.8% | 0.957 | 136 ms | 66.8% | 0.769 |
| **T test(F3)** | 82.56% | 0.888 | 157 ms | 57.9% | 0.695 |
| **Union(F1,F2,F3)** | 83.66% | 0.896 | 199 ms | 54.3% | 0.6627 |
| **Concat.1(F1,F2,F3)** | 57.6% | 0.689 | 70.1 ms | 38.6% | 0.4804 |
| **Concat.2(F2,F3,F1)** | 91.61% | 0.9508 | 58.9 ms | 65.5% | 0.748 |
| **Concat.3(F3,F1,F2)** | 89.4% | 0.932 | 58.3 ms | 65.5% | 0.748 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Techniques/Performance Metrics** | **Accuracy** | **F1 Score** | **Time Taken** | **Test Accuracy** | **Test F1 Score** |
| **Without Feature Selection** | 91.73% | 0.956 | 1410ms | 90.59% | 0.947 |
| **Mutual Info(F1)** | 90.4% | 0.947 | 140 ms | 86.1% | 0.916 |
| **F Classifier(F2)** | 94.1% | 0.968 | 143 ms | 74.8% | 0.837 |
| **T test(F3)** | 89.6% | 0.939 | 146 ms | 90.5% | 0.9469 |
| **Union(F1,F2,F3)** | 90.57% | 0.948 | 186 ms | 86.9% | 0.924 |
| **Concat.1(F1,F2,F3)** | 73.4% | 0.826 | 61.3 ms | 55.01% | 0.6754 |
| **Concat.2(F2,F3,F1)** | 90.56% | 0.944 | 61.7 ms | 73.4% | 0.823 |
| **Concat.3(F3,F1,F2)** | 91.7% | 0.955 | 64.8 ms | 81.7% | 0.889 |

**(ii.) SVM Stats:**